Molecule to reduce platelet formation to treat atherosclerotic cardiovascular disease

Technology #cu13093

Diseases such as essential thrombocythemia, in which blood platelets are overproduced, can cause heart attacks and strokes, the leading cause of mortality worldwide. Despite recent developments in statins and anti-platelet therapeutics, there is still a great medical need for a safe, effective therapeutic for the prevention of athero-thrombotic events. This technology provides a molecular target to inhibit excessive proliferation of platelets and identifies a small molecule that can be utilized to take advantage of this molecular pathway as a therapeutic. This molecule may also be used in combination with other related therapeutics to provide a synergistic result. As such, this technology provides a molecular target for potential therapeutic compounds to treat atherosclerotic cardiovascular diseases and other related platelet disorders.

Reduction of platelet count to treat underlying cause of various atherosclerotic disorders

While there are currently products on the market to prevent heart attacks and strokes, these treatment options are primarily symptomatic and do not treat the underlying cause of disease. This technology specifically targets platelet overproduction through a straightforward negative-feedback mechanism acting on LYN kinases, enzymes that regulate the production of cells that give rise to platelets. By identifying a mechanism to directly inhibit platelet overproduction, this technology presents a distinct and more targeted approach compared to existing treatments for atherosclerotic cardiovascular disease.

This technology has been shown to effectively reduce platelet count in a mouse model of thrombocythemia.

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Applications:

- Treatment of myeloproliferative neoplasms and associated disorders
- Treatment of atherosclerosis and related cardiovascular diseases
• Prevention of atherosclerotic diseases (atherothrombosis, coronary heart disease, chronic kidney disease, stroke, etc.)
• Treatment and prevention of hypercoagulable disorders or thrombophilia
• Treatment of hypercholesterolemia
• Tool for research in related molecular mechanisms and genetic conditions

Advantages:
• Directly targets underlying mechanism in disorders associated with platelet overproduction
• May provide cholesterol-related benefits in addition to platelet control

Patent Information:
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Related Publications:

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